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A Venezuelan field worker readies carrots for market by trimming off the leafy tops.

Dutch Feed Changes Alter Supply Patterns For U.S. Exporters

By Harold A. McNitt

Because the European Community's Common Agricultural Policy makes feedgrains more expensive within the Community, feed compounders in the Netherlands and other EC countries are turning to less costly ingredients—usually nongrain substitutes. The shift benefits some U.S. exporters; hurts others.

The changing composition of U.S. feed-ingredient exports to the Netherlands in recent years has opened some new doors for U.S. exporters and narrowed the opportunities for others.

One of the major consequences of the European Community's Common Agricultural Policy (CAP)—in effect since 1962—has been to make feedgrains relatively more expensive within the Community.

As a result, the mixed-feed industry in the Netherlands and other EC countries continues to turn to less costly feed ingredients—usually nongrain substitutes.

Grains, which prior to 1967 made up about two-thirds by weight of Dutch commercial feeds, in 1977/78 accounted for less than 20 percent of the estimated 12.3 million metric tons of feed produced in the Netherlands.

Such nongrain ingredients as oilseeds, manioc, citrus pulp, corn gluten, grain milling byproducts, and animal grease have displaced traditional grain components—a shift that has benefited some U.S. exporters and hurt others. Unlike grains, these commodities enter the EC with minimal or zero import duties or levies.

The Dutch mixed-feed industry, a world leader in the use of linear programming techniques to formulate optimal feeds at least cost, has incorporated nongrain ingredients into its products by the use of formulas that provide adequate ratios of energy components, proteins, minerals, and other feed necessities.

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Grains, while primarily viewed as energy sources, also are relatively high in proteins, while most of the nongrain substitutes are not. Feed compounders have found that use of such substitutes must be supplemented by a higher proportion of high-protein ingredients, such as oilseed meals, fishmeal, and animal meal.

Unlike the United States, where animal feeds are commonly mixed on the farm, Dutch farmers overwhelmingly use premixed feeds. The relatively small land area makes shipments of compounds from factory to farm economical.

The feed compounders also benefit from ready access to feed ingredients through canal and river transportation from Rotterdam and other ports.

The small size (average is about 13 hectares) of most Dutch farms is another factor, since use of premixed feeds is more practical for many farmers than on-farm mixing.

The Dutch farmer's preference for mixed feeds also reflects vigorous marketing efforts by the feed industry. Over half the country's output of compound feeds is made by farmer-owned cooperatives, one of which is Europe's largest feed compounder. Manufacturing technology is second to none in the world.

Dutch feed compounders produced an estimated 12.3 million metric tons of feed in 1977/78 (July-June), 3 percent more than in the previous year. Feed for hogs accounts for 42 percent of total production, cattle 34 percent, and poultry 19 percent.

The livestock industry is a key sector of the Dutch farm economy. Accounting for two-thirds of total agricultural output by value,

Mechanized unloading of imported grain at Europort, near Rotterdam, the Netherlands. Dutch feed compounders benefit from ready access to ingredients through river and canal transportation from Rotterdam.

livestock production has tended to stabilize after a period of rapid growth that started in the early 1960's.

Assisted by the Dutch compound feed industry—which provided technical knowhow, new types of feed, and even financing—Dutch farmers doubled pork production and tripled poultry output during the 1960's.

The CAP established a Community-wide price support system for many commodities produced within the EC, including grains. To complement the price supports, the EC set up a system of threshold (minimum import) prices and variable levies on grain imports to maintain Community preference.

Use of nongrain feed ingredients accentuated the problem of manufacturing balanced feeds with adequate ratios of energy components, proteins, minerals, and other feed necessities.

The grains, while primarily viewed as energy sources, are also relatively high in protein, whereas most of the cheaper nongrain substitutes are not.

Compounders found that use of such substitutes had to be supplemented by a higher proportion of high-protein ingredients such as oilseed meals, fishmeal, and animal meal.

The volume of grain used in Dutch compound feed remained relatively level from 1960/61 (at 4.1 million tons) to 1974/75 (3.6 million tons). Since then, however, the volume has declined to only 2.4 million tons in 1976/77—an exceptionally bad grain crop year in Europe—and an estimated 2.2 million tons in 1977/78.

The proportion of grains used in Dutch feeds has declined even more sharply. Of the 6.1 million tons of mixed feeds produced in 1960/61, 68 percent of the ingredients by weight were feedgrains. By 1965/66, 3 years after the CAP was initiated, the proportion of feedgrains going into compound feeds had dropped to less than 50 percent.

At the beginning of the present decade, 9.4 million tons of mixed feeds were produced, but only one-third of the components were grains. By 1977/78, less than one-fifth of the estimated 12.3 million tons of feed produced will be grains. This drop over the past two decades represents a revolution in Dutch compound feed manufacture.

Despite this trend, the Netherlands remains a major world market for U.S. feedgrains, especially corn. U.S. gross (unadjusted) exports of corn to Dutch ports totaled 4.1 million tons in 1977, second only to Japan. However, in recent years the Netherlands has re-exported approximately half of its corn imports, mainly to neighboring EC countries.

Several nongrain feed ingredients have scored phenomenal success on the Dutch market as substitutes for feedgrains.

Manioc, high in energy but low in protein, is a star peformer. In 1960/61, only negligible quantities were used, but in 1977/78 it will account for an estimated 1.9 million tons or 15 percent by weight of all compound feed produced.

Thailand is the principal supplier, with Indonesia a distant second. Manioc entering the EC is subject to a duty of only 6 percent.

Citrus pulp—another high-energy, low-protein ingredient—has also scored spectacular increases. First used by Dutch compounders in 1968/69 (15,000 tons), citrus pulp use increased rapidly from 109,000 tons in 1970/71 to an estimated 950,000 tons in 1977/78. The United States supplies about three-quarters of this duty-free ingredient.

U.S. exports have benefited as well from a sharp rise in Dutch use of corn gluten feed, a starch milling byproduct rich in certain proteins as well as energy. Its use expanded from only 65,000 tons in the early 1960's to almost 600,000 tons in 1970/71, and has since more than doubled to about 1.3 million tons in 1977/78. It comprises 10 percent by weight of all compound feed produced.

About 70 percent of corn gluten feed requirements are normally supplied by the United States. The Netherlands is the largest U.S. overseas market for this commodity; exports totaled 775,000 tons valued at $126 million in 1977. Corn gluten feed enters duty-free into the EC.

Grain milling byproducts are another U.S. feed ingredient export to the Nether-

lands. Their use by Dutch compounders from all suppliers increased by 250 percent during the 1960's but has leveled off in this decade and will approximate 1.2 million tons this year.

Use in feeds of fats and greases also is expanding. According to Dutch statistics, imports of U.S. lard in 1977 jumped 126 percent over the previous year's total to 8,800 tons, while imports of U.S. tallow and grease doubled to 92,600 tons.

U.S. exports to the Netherlands of wheat and corn byproducts (excluding gluten feed) totaled 237,000 tons valued at $28 million in 1977, a 23 percent increase in volume over the previous year's total.

The biggest U.S. sales gains, however, have occurred in the oilseed sector. Dutch feed compounders virtually tripled use of oilseed meals—principally soybean meal—during the 1960's, with the greater increase coming in the latter half of the decade.

Their use leveled off at about 2 million tons annually between 1972/73 and 1975/76 but in 1976/77 reached 2.2 million tons, reflecting use of oilseed meals to make up for the drought-induced shortage of feedgrains in Europe.

The Netherlands in 1976 ranked after Japan and West Germany as the third largest market for U.S. soybeans, even after allowance for transshipments. Dutch endusers bought 1.6 million tons valued at $344 million—a 58-percent volume increase over the 1975 level. In 1977, adjusted U.S. soybeans exports to the Netherlands again totaled 1.6 million tons, but because of rising prices were valued at $434 million.

The U.S. share of the Dutch market—normally 85-90 percent—is expected to be even greater in 1978 because of reduced Brazilian output. Soybeans receive duty-free entry into the EC under the General Agreement on Tariffs and Trade (GATT).

U.S. soybean meal, although a major export to the Netherlands, has not fared as well as soybeans. The U.S. share of the Dutch market plummeted from about nine-tenths at the start of this decade to about one-third in 1977.

Heavy inroads by Brazil and, to a lesser extent, West Germany and Argentina, account for the drop. (Although not a soybean producer, Germany has supplied meal to the Netherlands in large quantity since 1973.)

U.S. soybean meal exports to the Netherlands totaled 230,000 tons in 1977, an 18-percent decline from the 1976 total. Sales are expected to increase this year, however.

Increased use of grain substitutes by Dutch and other European feed compounders has brought demands by major EC grain producers (especially in France) that steps be taken to reduce imports of manioc, corn gluten feed, citrus pulp, and other low-priced energy feeds.

The same elements within the Community are seeking measures to reduce imports of soybeans and other high-protein materials.

Should any of these proposals be adopted and applied to U.S. commodities, the impact on U.S. exports could be severe. However, EC tariffs on most of the commodities—including soybeans, corn gluten feed, citrus pulp, and sunflowerseeds—are bound at zero in the GATT and could not be changed without negotiation. □

Demand for U.S. Produce Is High in Venezuela

Domestic tomatoes capture the attention of two Venezuelan children at an agricultural fair in Caracas.

Imported fruits and vegetables are in extremely high demand in Venezuela, with some shoppers in Caracas willing to pay as much as $6 per kilogram for fresh U.S. carrots, lettuce, and sweet potatoes. But balance-of-payments problems have forced the Government to crack down on imports and one area that could be sharply affected is the imported fruit sector.

By Lynn A. Krawczyk, staff writer, *Foreign Agriculture*.

In an interview with *Foreign Agriculture*, Frank Lee, Assistant U.S. Agricultural Attaché in Caracas, outlined the reasons behind the Venezuelan Government's tightening of import restrictions and what effect this could have on the United States—the largest supplier of fruits and vegetables to Venezuela, with its biggest market opportunity traditionally in fruit sales.

Venezuela produces a wide array of fruits and vegetables, but not enough to keep pace with increas-

ingly affluent consumers' demand. According to Lee, producers lack the infrastructure (land, labor, and agricultural inputs) necessary to gear up output of fruits and vegetables.

Venezuela is typical of many South American countries, said Lee. People prefer fresh fruits and vegetables to frozen or processed ones. They consume the country's entire domestic fruit and vegetable output, plus a substantial amount of fresh and processed imports.

But despite high foreign exchange earnings from petroleum, Venezuela has run into balance-of-payments problems, and last year a decree was issued that will restrict the importation of "exotic" fruits (such as apples, pears, grapes, plums, and peaches) into Venezuela to a maximum of 15,000 metric tons per year by 1981. Currently, according to Lee, Venezuela imports some 40,000 tons of fruit per year. In addition to buying from the United States, Venezuela also imports apples and pears from Chile and Argentina.

"The effect of this decree," Lee said, "will be to force domestic processors to use domestically produced fruits for manufacture of baby foods and for use in the fresh market. All this is geared toward making Venezuela less dependent on the import market for fresh fruit needs.

"But many officials in the trade believe that this policy will not be very effective," said Lee.

"They (the tradespeople) know the Venezuelan consumers have become accustomed to foreign-produced fruit—more specifically, that from the United States. Because of consumers' preferences for U.S. fruits, people in the trade believe that during this 5-year transition period, there will be some importation beyond the amount specified and indeed the yearly maximum even may be waived," he said.

At this point, it is too early to tell what the effect will be on U.S. exports of fruit to Venezuela. Thus far, imports have not been curtailed, but additional charges have been put on imported fruit.

Lee said much of Venezuela's fruit is not produced commercially; instead, families grow and sell the fruit to small stores or in roadside stands.

There are no official data on the total production of Venezuela's tropical fruits, but the Government is trying to encourage producers to grow such fruits as guavas, papayas, mangoes, and even grapes, so there will be enough to meet domestic demand.

"There are no carryover stocks of fruit," said Lee. "Production and imports equal domestic consumption. So we really do not have a handle on what current demand levels for fruit are. But we do know that demand is growing faster than imports and production. For this reason, fruit prices can be fixed at artificially high levels and more than a fair return can be made on fruit investment. Demand is very strong and domestic production is rather static."

Lee explained that the situation is somewhat similar for vegetables. Production of vegetables is often on small, family-owned farms that produce largely for their own consumption.

"Again," said Lee, "we do not have exact data on vegetable consumption in Venezuela because much is lost owing to poor storage facilities. There are virtually no cold storage facilities for potatoes, carrots, or lettuce, so inventory levels have remained low owing to spoilage."

Some of the major types of vegetables produced in Venezuela include cassava, apio (a root plant), plantains, a wide array of squash, beets, yams, onions, and white potatoes.

But again, Lee cited the effect of storage problems on vegetables. "In 1977," he said, "Venezuela produced a record 190,000 tons of potatoes. But owing to the inability of the infrastructure to absorb that amount, about one-third of the crop was lost because of spoilage.

Retail markets buy their vegetables from the Coche Wholesale Market in Caracas—the largest in the country—keep it in their warehouses for a week or so, and then are forced to sell it because the quality begins to deteriorate. But consumers still buy these vegetables — despite the poor quality—because demand is so high."

Lee said the Venezuelans produce enough vegetables domestically, but quality is poor and some specialty items are imported.

"The prices (for the U.S. items) are extremely high," said Lee. "For example, U.S. carrots, lettuce, and sweet potatoes cost $5-$6 per kilogram. While very costly, these items sell rapidly because they are U.S. products and consumers recognize the high quality of the items."

In contrast, Lee stated that domestically produced sweet potatoes cost only 50 U.S. cents per kilogram—but they are of poor quality and do not sell very well.

Asked if there is a market in Venezuela for processed fruit and vegetables, Lee said "the market does exist, but the problem is educating the consumer to accept the processed item over the fresh one."

There are other problems with processed vegetables and fruits. "The other, larger problem," said Lee, "is getting through the Government red tape of allowing processed items to be registered in the country—registration can be lengthy and in some instances very costly—and issuing proper labeling for distribution of those processed commodities here in Venezuela."

According to Lee, in processed as well as fresh items, the U.S. product is preferred. Venezuelans, he said, will buy a frozen or processed U.S. vegetable before they will buy one from another country because they know the quality it represents.

But the Venezuelan Government is making an attempt to encourage domestic production of fruits and vegetables. "One thing the Government is doing," said Lee, "is providing production subsidies for virtually all agricultural products, particularly cereals and vegetables.

"In addition, the Government has fixed retail prices," he said. "While this last measure may not be an incentive for producers, it assures the consumer of a fair price for a given domestically produced commodity. Most of the incentive is in the form of production subsidies and import restrictions to encourage domestic production."

But until domestic production of fruits and vegetables can meet the demand of Venezuelan consumers, the country may still have to rely on imports —and particularly those from the United States. □

Bergland Trip To USSR-East Europe Explored Farm Trade

By David M. Schoonover

This May, Secretary of Agriculture Bob Bergland visited the USSR and three East European nations to discuss bilateral agricultural cooperation and farm trade issues. He was accompanied by Dale Hathaway, Assistant Secretary for International Affairs and Commodity Programs; Thomas Hughes, Administrator, Foreign Agricultural Service; and other Department of Agriculture officials. Following is a report on their findings.

United States agricultural cooperation and trade with the USSR, Poland, Hungary, and Romania should continue to thrive in the years ahead, as those nations act to meet pent-up consumer demand for food and to place priority on expanding livestock production.

These are the findings of Agriculture Secretary Bob Bergland and other members of the U.S. Department of Agriculture Mission that visited the four nations during May 9-25, 1978. Meetings with Government leaders and visits to agricultural enterprises revealed that—for the most part—the countries are making impressive progress in expanding and modernizing farm production.

To achieve their ambitious goals, however, they need the sophisticated technology and equipment available from suppliers such as the United States, as well as feedgrains, soybeans and/or meal, and similar products necessary to fuel livestock expansion.

Partly as a result of such requirements, Eastern Europe and the Soviet Union have been fast growing importers of U.S. farm products. Last year, this region took nearly $2 billion worth of U.S. farm exports, (including transshipments), whereas in 1969 and 1970 such purchases were under $300 million. Of that 1977 total, the four nations visited by the Secretary accounted for about $1.5 billion, including over $1 billion for the USSR; nearly $300 million for Poland; $118 million for Romania; and $49 million for Hungary.

At each stop, Secretary Bergland discussed recent changes in U.S. agricultural policies, with emphasis on U.S. policy initiatives to reduce variability in world prices for farm products. First, he stressed the creation of a system of farmer-owned domestic reserves. Secondly, he emphasized U.S. support for the concept of commodity agreements, such as the International Wheat Agreement now being negotiated.

In support of U.S. stabilization policies, the Secretary stressed the need to obtain better information concerning foreign demand —both short term and long term—for U.S. grain and other commodities.

Concerning international trade, the Secretary said that the United States continues to seek reductions in trade barriers. He stressed that the United States would not resort to trade embargoes, such as the embargo on soybeans and related exports during a brief period in the summer of 1973. In addition, the Government will avoid programs that would sell U.S. crops below the cost of production.

The Secretary stated further that the United States no longer is basing aid to poorer nations on surpluses of U.S. agricultural commodities. And he emphasized that the time has come for agricultural scientists of all nations to work together toward avoiding impending problems of world food hunger. To this end, he urged closer bilateral cooperation in agricultural science and technology with each country visited.

The desire to improve bilateral agricultural relations with the United States—especially in the East European countries visited but also in the USSR—was particularly noteworthy. Proposed implementation of this goal, however, differed by country.

In the USSR, officials emphasized longer term scientific and technical research cooperation, although agricultural trade also was recognized to be of mutual interest.

Polish officials emphasized long-term commodity supply agreements and new credit programs, including longer term credits. Also proposed were technological cooperation and scientific and educational exchanges.

In Hungary, expansion of two-way agricultural trade and scientific and technical cooperation were the principal interests, and a more formal agreement for agricultural cooperation was proposed.

Romanian officials stressed innovative cooperative arrangements in production and marketing. These included joint ventures, long-term agreements, technology exchanges, and other arrangements. Expansion of scientific and educational cooperation also was mentioned.

Agricultural emphasis in both the USSR and Eastern Europe recently has been on expanding livestock production and satisfying growing consumer demand for livestock products. This commitment has led to use of imported grains, oilseeds, and oilseed products to cover livestock feed needs and to an acceptance of external debts to make such imports possible. Sensitivity to retail price increases has accentuated import needs, particularly in Poland.

Within each country, the team visited a few large specialized livestock complexes. Over the past decade, governments of the region have organized and constructed the complexes to supplement and eventually, perhaps, supplant most livestock production on the traditional collective and State farms. This shift to large units has enabled the countries to accelerate the introduction of advanced technologies and

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Clockwise from top left: Secretary Bergland (holding baby) at a private farm in Poland; with Soviet Premier Aleksey N. Kosygin; at a press briefing in Poland; and greeting Polish Premier Piotr Jaroszewicz.

practices in livestock production.

Among such livestock enterprises visited were hog complexes in the USSR and Romania; beef fattening complexes in the Soviet Ukraine and Romania; poultry complexes in Hungary and Romania; and a specialized dairy operation (based on U.S. Holsteins) in Hungary. In contrast, smaller private farms still predominate in Poland.

(The 1976-80 plan in the USSR stresses further development of large-scale livestock and poultry production complexes, and related enterprises. Government investment in construction of these enterprises is to double over the 1971-75 level. Soviet planners foresee "industrialized" production of 80 percent of the eggs, 30 percent of the pork, and 14 percent of the milk and beef by 1980.)

Livestock complexes generally are expected to produce their own supplies of roughage feeds but are heavily dependent on outside sources for grain and protein feed. This increasing dependence makes the USSR and Eastern Europe more susceptible to shortfalls in internal grain or feed production and more demanding of sustained increases in grain supplies. Protein feed needs—met largely from soybeans—also are heightened by the intensive feeding operations.

USSR. Secretary Bergland visited the USSR during May 9-16, at which time both he and the Soviet officials stressed the importance of bilateral trade. Among points covered by the Secretary was the need for better information from the Soviets, particularly in the area of crop forecasts. This need was related specifically to the dates on which the Secretary must decide set-aside levels for U.S. wheat and corn area.

Along this line, the Secretary proposed that joint research in crop forecasting would be useful. The Soviets likewise indicated interest in cooperative crop and weather forecasting, suggesting in one case that the Soviet Academy of Science and the U.S. National Air and Space Agency (NASA) work together on such forecasts.

Secretary Bergland suggested that—in addition to crop forecasting—longer term cooperation with the USSR would be useful in

Clockwise from top left: Secretary Bergland with Jozsef Hammer, Hungarian Deputy Minister of Agriculture and Food; the Secretary, Deputy Minister Hammer, and other officials at a press briefing; visiting Hungary's Hunyadi Cooperative Farm, where U.S. Holsteins have been used as breeding stock; inspecting equipment at the Babolna Farm, Hungary, with farm director, Robert Burgert (right of Bergland) and Mrs. Bergland; and with Romanian Minister of Agriculture and Food, Angelo Miculescu, toasting the signing of a Joint Communique regarding discussions during the Secretary's visit.

the study of areas such as soil salinity, wind erosion, and animal diseases. The Soviets expressed interest in such undertakings, as well as in launching a major agricultural cooperation project that might focus on protein production and use, integrated pest management, plant nitrogen fixation, or development of automated livestock complexes.

The need for better access of U.S. teams to agricultural areas in the Soviet Union also was brought up by Secretary Bergland.

Regarding the U.S.-USSR Grain Agreement, the Soviets indicated that they would continue to fulfill the requirements of the Agreement. Currently, the USSR is required to purchase up to 6 million tons of U.S. wheat and corn yearly during 1976-81. Whenever purchases for any one year exceed 8 million tons, there are to be prior consultations. To make up for a lower than expected grain crop of 1977—195.5 million tons, against a record 223.8 million in 1976—the USSR is importing almost 15 million tons in the year ending September 30, 1978.

Soybean trade also was discussed, both at the Soviet Ministry of Procurements and the Ministry of Foreign Trade. Secretary Bergland indicated that U.S. soybean production could potentially be increased substantially above current levels, but that there is a need for information on longer term demand prospects.

One Soviet official revived an earlier suggestion of a possible U.S.-USSR soybean agreement similar to that for grain. (In the first 6 months of 1978, the United States shipped 693,000 tons of soybeans to the USSR, compared with

565,000 tons in all of 1977 and 571,000 in 1976.)

Concerning storage, one official said that Soviet grain storage capacity is 300 million tons, including 150 million in the Ministry of Procurements system. Large programs also were reported underway for mechanization of the flour industry and development of the mixed feed industry, and the Soviets expressed interest in working with the United States in the areas of feed mixing and grain handling.

Secretary Bergland said that this country would be glad to assist with Soviet feed rations, perhaps through Government and private industry arrangements.

Poland. Secretary Bergland visited Poland during May 18-20. Discussions focused on trade and credit, but also covered storage capacity in Poland and scientific and technical cooperation.

Polish officials indicated strong interest in concluding a long-term grain supply agreement with the United States. Secretary Bergland's response was that the United States does not need a formal written agreement, but simply the best indication of needs.

Currently, the United States and Poland have an understanding on grain trade, under which Poland has stated its intent to purchase 2.5 million tons of U.S. grain (± 20 percent) a year until 1980, depending on U.S. supplies.

In calendar 1977, the second year of the understanding, the United States shipped 2.3 million tons of grain worth $213 million to Poland. That year, the United States also exported to Poland 178,000 tons of soybean meal worth $41 million—the country's third largest U.S. agricultural export to Poland next to corn and wheat.

Most Polish officials indicated that Poland would be interested in substantial imports of U.S. grain and other agricultural products for severel years to come. Polish estimates of these needs included 3-5 million tons a year of U.S. grain, as well as substantial quantites of soybeans, and oilseed meal.

Several Polish officials, in turn, expressed interest in boosting Polish farm exports to the United States. Among products mentioned were ham and other meats, vodka, beef, confectioneries, rapeseed oil, and feathers and down.

Requests for the best possible credit terms also were a dominant focus. Poland currently receives Commodity Credit Corporation (CCC) credit for the import of grains, soybeans and products, cotton, tobacco, and other products. But the officials were interested in a longer payback period than the 3-year maximum available through CCC and wanted the best possible rates and terms.

However, the Secretary agreed to consult with other U.S. Government agencies and authorities and to explore other credit facilities available.

One Polish official proposed U.S. credit assistance for construction of grain elevators at Polish Baltic ports. These elevators would provide storage for U.S. grain moving to Poland and elsewhere in Eastern Europe.

Officials also spoke of the excellent agricultural scientific cooperation in the past and noted that projects now were being negotiated under a joint fund.

Hungary. Secretary Bergland visited Hungary during May 20-23. Hungarian officials indicated their satisfaction with improved bilateral relations and stated the signing of the U.S.-Hungarian Trade Agreement this spring was an important milestone in relations between the two countries. (The Agreement became effective July 7, 1978. See *Foreign Agriculture,* July 24, 1978.)

The Hungarians further indicated a desire to formalize a joint agreement with the United States on agricultural cooperation and for broad bilateral agreements in livestock breeding and plant production.

Secretary Bergland said that as a result of the Trade Agreement, the United States can offer Hungary CCC credit for agricultural imports. Hungarian officials expressed interest in CCC credits and requested more information.

Other discussions focused on possibilities for increases in bilateral farm trade.

Products cited as possible candidates for Hungarian export expansion included canned hams, other pork products that have not yet entered the U.S. market, and possibly some types of cheese.

In turn, there was some Hungarian interest in a long-term agreement with the United States on soybean purchases under acceptable conditions.

Hungary uses about 600,000 tons of soybean equivalent annually, but produces only a small part of that quantity. The United States has been losing this market to Brazil, however, and now supplies less than 40 percent.

The Hungarians also inquired about imports of U.S. agricultural equipment and technology, especially for dairying, and about breeding livestock.

Romania. Secretary Bergland visited Romania May 23-25. Emphasis by officials there was on bilateral relationships involving technology exchanges, joint ventures, or other cooperative arrangements in agricultural production and marketing. Some Romanian proposals were not defined fully, but were exploratory.

Although Romania traditionally is a grain and sunflower oil exporter, officials raised the possibilities of long-term cooperative arrangements involving feedgrains, as well as soybeans and soybean meal.

Secretary Bergland said that the United States is not proposing long-term contracts or agreements, but is seeking the best possible information about trade demands.

As with Poland, officials expressed interest in improved credit terms, such as lower interest rates and a longer payback. They also repeated their earlier request for CCC credit for imports of 150,000-200,000 tons of U.S. soybeans in fiscal 1979.

Officials also showed interest in long-term arrangements for imports of bred dairy heifers from the United States—in the range of 500-3,000 head yearly.

One Romanian official emphasized that cooperation means two-way trade and—more than simply imports and exports—technological exchanges as well. Among projects mentioned were plants for processing soybeans and soybean derivatives and joint ventures in production of farm machinery and equipment.

The Romanians are projecting bilateral trade between the two countries at $750 million in 1978 and $1 billion in 1980. □

USSR Renews Interest In Soybean Output

A new round of interest in soybean cultivation has been sparked in the Soviet Union by burgeoning demand for high-quality protein livestock feed. Both soybean area and production are increasing in the Ukraine, according to an article in a recent issue of *Izvestiya*.

A total of 53,000 hectares were planted to soybeans in the Ukraine this spring. This contrasts sharply with a statement made last fall by an assistant minister of the Ukrainian GOSPLAN, who stated that by 1980 the area sown to soybeans in the Ukraine would only reach 30,000 hectares.

The two apparently conflicting statements may be reconciled partially by the fact that a significant portion of the area planted to soybeans each spring is harvested as forage and not for beans.

Nonetheless, it is possible that there may be more of a concerted effort toward stimulating the cultivation of soybeans in European areas of the USSR than has been borne out to date or indicated by the assistant minister last fall. At this stage, it is difficult to appraise accurately the situation because detailed data on soybean production in the USSR are quite limited and many of the agronomic problems are yet unresolved.

Cultivation of soybeans in European USSR fell off considerably through the 1950's, being replaced by more profitable crops, such as wheat, sunflowers, and corn. Around 1960, a combination of foreign policy problems between Moscow and Peking and significantly reduced availabilities of soybeans in the People's Republic of China spurred the Soviets to increase soybean production sharply, but this expansion was concentrated in the traditional growing areas of the Far East.

The production response was directed toward vegetable oil demand rather than protein meal demand. Between 1960 and 1961, soybean area increased two-thirds—from 422,000 hectares to 702,000 hectares. The maximum soybean area of 905,000 hectares was reached in 1972, but has fallen off steadily to a recent low of 762,000 in 1976. Soviet soybean yields are very low by U.S. standards—reaching a maximum of 0.96 tons per hectare in 1975.

In the near term, it is doubtful that the Soviets will be able to make any appreciable progress in producing soybeans to close the gap in their protein deficit. Soviet soybean production has been averaging only about one-half million tons annually, while the demand for high protein feedstuffs is outstripping the Soviet's ability to produce soybeans.

The Soviets are quick to point out some serious problems that have and will continue to hamper the development of soybeans. There are four fundamental caveats to expanded production: Suitable varieties for the short growing season, supplies of agricultural chemicals, irrigation, and efficient machinery.

The head agronomist at the Kharkov Oblast Agricultural Administration has stated that in Kharkov Oblast soybeans are sown together with corn for green chop, although efforts are being made to raise soybeans for harvest as beans. However, the lack of suitable varieties is a major pitfall.

Currently, Kirovograd-4 is planted predominantly in the Oblast, but it has the tendency not to ripen in the short growing season. (Kharkov is close to the fiftieth parallel or at the same latitude as Winnipeg.) The variety Kiev-48 is better suited for Kharkov's agro-climatic conditions, but seed supplies are not available.

In addition to the suitable variety problems, there are inadequate supplies of three mainstay herbicides—treflan, linuron, and basagran—which the Soviets feel are absolutely vital to success in soybean expansion.

Sufficient irrigation facilities are also necessary if success is to be achieved. Experiments in Crimea demonstrated that yield differentials between fields with regulated irrigation and nonirrigated land are on the magnitude of 4:1, respectively, with a yield of 2 tons per hectare on

Brazil's Wheat Goal and Wheat-Soybean Connection

Brazil's target of wheat self-sufficiency recedes further into the future. In a recent speech, Agriculture Minister Paulinelli said it may be 10 to 15 years before the country is able to produce all the wheat it consumes—in sharp contrast to the previous goal of 1979/80.

The beginning of Brazil's dream of self-sufficiency in wheat dates from the late 1960's when the Government raised its support price for wheat far above the world price as an incentive for farmers to plant more wheat. The plan produced some success. Brazil's wheat output jumped from 694,000 metric tons in 1968, to 1.1 million tons the following year, to 2.0 million in 1971, and to 3.0 million in 1976.

A key element in the failure to achieve wheat self-sufficiency is Brazil's semitropical climate, which is not conducive to current varieties of wheat.

Also, the bubble bursts every few years and imports jump when bad weather leads to sudden downturns, such as shortfalls—from the previous year's production—of 1.3 million tons in 1972 and 1975 and about 1 million last year.

In some years, Brazil has purchased up to 1 million tons of wheat from Argentina, but, when there are shortfalls in the Argentine production, Brazil purchases more wheat elsewhere—principally from the United States and Canada. The Canadians have gained a strong foothold in the Brazilian wheat market, initially through the use of credit and long-term supply agreements.

Because Argentina is currently experiencing a bad year, Brazilian imports of U.S. wheat are expected to shoot to about 2.8 million tons in calendar 1978, compared with 837,000 tons last year out of total imports of 2.9 million tons.

In the seventies, Brazil's wheat consumption has

irrigated land being designated as a minimum for economic feasibility. In 1976, the Ukrainian average soybean yield was 1.03 tons per hectare.

The area of prime importance for success in Soviet soybean cultivation is the development of short-season varieties. The Ukrainian Scientific Research Institute for Irrigated Land has been experimenting with four varieties that it currently believes are most suitable for the Ukraine. These include two Soviet varieties, Kherson-1 and Flora, the Canadian variety, Merit, as well as the U.S. variety, Amsoy.

A major breakthrough for the Soviets is probably far down the road, but the prospects for Soviet soybean expansion will have to be reviewed occasionally to appraise the progress of agronomic developments in addition to major policy decisions. The internal Soviet demand situation for high-protein foodstuffs has set the stage for the Soviets to demonstrate their protein production potentials and the role that soybeans may play in the scenario. □

risen steadily while total wheat imports have increased sharply, but erratically—from 1.9 million tons in 1970 to 3.0 million in 1973, dipping to 2.1 million in 1974 and 1975, then rising to a record 3.4 million in 1976. A new high of 4.0 million tons is forecast for 1978.

A spinoff from the wheat "boom" was Brazil's dramatic expansion in soybeans. Since the mid-1950's, farmers in Rio Grande do Sul had been double cropping wheat and soybeans. They first planted wheat and then followed with soybeans that utilized the residual fertilizer left after the wheat harvest. Brazil's annual soybean production did not exceed a half million tons—until the year 1967.

As the country's wheat area and production rose sharply in response to the high support price, so did the soybeans grown on the same land. In recent years, some farmers began to abandon wheat altogether and instead began single cropping soybeans, which results in higher yields. Brazil's soybean outturn expanded throughout the 1970's—until dry weather caused a cut in production this year.

Still, Brazil has attained the rank as the world's second largest producer-exporter of soybeans, behind the United States. But its quest for wheat self-sufficiency continues, and attainment of that goal appears further away. □

U.S. Rice Exporters Boost Share Of Switzerland's Market

Switzerland's imports of U.S. rice during 1977 accounted for a record 70 percent of total Swiss rice imports, according to Homer F. Walters, U.S. Agricultural Attaché in Bern.

The volume of U.S. rice reaching Switzerland last year reached 12,708 metric tons (milled basis), second only to 14,912 tons in 1970, when the U.S. share was 64 percent.

Consumer acceptance of rice in Switzerland at 3 kilograms per person is the highest of the nonproducing countries in Europe. And U.S. long-grain rice is eaten more often than rice from any other source.

Because of Government rice reserve stocks, imports have not varied more than about 15 percent from latest 7-year annual average of 20,200 tons.

As a result of a Government policy prohibiting reliance on a sole source of supply, U.S. rice exporters should not expect their Swiss market share to expand. However, in the light of apparent good consumer acceptance of U.S. rice in Switzerland, U.S. exporters can try to retain their present high level.

Only twice in the 1970's have Switzerland's annual rice imports from the United States fallen below 50 percent of the total, and then only marginally.

In the 7 years prior to 1977, the United States supplied an average of 11,000 tons annually, ranging from 9,810 to 14,912 tons. During those years, the U.S. market share averaged a healthy 55 percent but never below 46.5 nor above 66 percent until 1977.

With 10,477 tons of brown rice (7,858 tons, milled basis, at 75 percent yield) and 4,850 tons of milled rice (mostly parboiled), U.S. long-grain rice provided two-thirds of total domestic consumption and added to the volume and share of U.S. rice in yearend stocks.

The most important competitor for U.S. rice in the Swiss market is Italy, which sold an average 6,625 tons in each of the 7 years prior to 1977 for an average market share of 33 percent —from a high of 47 percent in 1971 to 21 percent in 1972.

The U.S. Rice Council of Houston, through its Zurich office has played an important role in the growth of U.S. rice consumption in Switzerland. □

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Soviet Union's Industrial Meat and Milk Output Increases

Soviet industrial output of meat and dairy products (from Government-held supplies) during January-June 1978—compared with the same period a year earlier—showed increases in the production of meat and whole milk products but a decline in butter output.

Up 8 percent from the year-earlier level, January-June meat outturn totaled 4 million tons. This indicated that total meat output may exceed the 15.6 million tons planned for 1978. The previous record was 15 million tons set in 1975.

Total industrial meat output during the January-May 1978 period rose 9 percent above output in the same months in 1977 to a near record. Based on data reported in the Soviet press—which may not agree with other available information—total meat output this year should easily exceed the previous record.

June 1, 1978, livestock inventories in the socialized sector indicated record numbers of cattle (92.5 million head), cows (29.3 million), hogs (55.9 million), and poultry (650.1 million). Cattle and cows were both up 2 percent, and hogs and poultry both by 9 percent from June 1, 1977, levels. Sheep and goats made a slight gain but were 1 percent below record numbers on June 1, 1975.

Industrial output of whole milk products during January-May 1978 reached a record 10.3 million tons (in milk equivalent), reportedly 3 percent above the year earlier level. Butter output dropped to 478,000 tons.

The 1978 Plan goal for combined socialized (industrial) and private sector milk production is 95.4 million tons, and 1.45 million tons for butter. □

USSR: January-May Industrial Meat and Dairy Product Output, 1973-78

[in 1,000 tons]

Item	1973	1974	1975	1976	1977	1978[1]
Meat	2,722	3,060	3,335	2,830	2,941	3,200
Whole milk products	8,600	9,500	10,200	9,800	10,100	10,300
Butter	422	446	430	401	500	478

[1] As reported in Soviet press. Data are subject to revision.

Malawi's Farm Sector Booms, Agricultural Exports Strong

Malawi's agriculture, the country's most important economic sector, is showing impressive growth as production of several crops—especially tobacco—increases. Farm product exports are the mainstay of the economy, particularly since world export prices are high.

Malawi's tobacco production boomed to an estimated 51,000-metric-ton level during 1977—about 34 percent over the previous year's. The value of tobacco production increased by 6.1 percent to $104.4 million.

Since 1967, tobacco production has increased at a yearly average of 14 percent. But tobacco is not the entire story in Malawi's agricultural growth.

Sugar, tea, and rice have also shown high rates of production increase. The agricultural sector employs about 90 percent of the economically active population. Subsistence production by smallholders still accounts for 62 percent of agricultural output.

Only a few crops are grown on estates, notably tobacco, tea, and sugar. Many of the estates are managed by Rhodesian expatriates and the estate products are grown for the export market.

For a small landlocked country of about 5.3 million people (mid-1977), Malawi's agricultural export performance is impressive. Agricultural exports dominate the economy and include tobacco, tea, sugar, peanuts, and sometimes corn and rice.

In 1977, the economy was boosted by high export prices for tobacco and tea. Corn is the major crop for domestic consumption.

While Malawi's per capita gross national product (GNP) was only $130 in 1975, it has increased at 7 percent a year from 1970 through 1975. Malawi's growth offers a contrast to neighboring Zambia's copper economy with its vulnerability in the world market.

Following 3 years of relatively low copper prices, Zambia is taking steps to further develop its agriculture. While its GNP is at a higher level than Malawi's—that is, $420 per capita in 1975—its real GNP per capita has increased at only 0.9 percent a year from 1970 through 1975. □